Technical building systems in existing and new buildings

Denmark

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CONCERTED ACTION ENERGY PERFORMANCE OF BUILDINGS

Regulatory energy performance requirements for Technical Building Systems (TBS)		Space heating		Water heating		A/C		Ventilation		Lighting	
Building type:		EXIST.	NEW	EXIST.	NEW	EXIST.	NEW	EXIST.	NEW	EXIST.	NEW
Q1.	Do you have regulations for a minimum standard of energy performance for technical building systems?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q2a.	In **new and existing buildings**, do the regulations apply to installation of NEW technical building systems?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q2b.	If the requirements for new buildings and existing buildings differ, explain (in a few words) why and how they differ?										
Q2c.	In **existing buildings**, do the regulations apply to REPLACEMENT of technical building systems?	Y		Y		Y		Y		Y	
Q2d.	In **existing buildings**, do the regulations apply to UPGRADING (e.g. enlargement or reconfiguration of the system, or replacement of main components) of technical building systems?	N[1]		N[1]		N[1]		N[1]		N[1]	
Q3a.	Do the regulations require a specified standard or method for **dimensioning**?	N	N	N	N	N	N	N	N	N	N
Q3b.	... if so, data about the building is normally needed to determine the maximum demand for service. How is data about the building obtained?”										
Q4a.	Do the regulations require **energy performance** to be calculated for each installation?	N	N	N	N	N	N	N	N	N	N
Q4b.	... if so, data about the building is normally needed to determine the typical annual demand for service. How is data about the building obtained (if differently from Q3b)?										
Q5.	Do the regulations require a specified standard or method for **installation**?	N[2]	N[2]	N[2]	N[2]	N[2]	N[2]	N[2]	N[2]	N[2]	N[2]
Q6.	Are there defined requirements for **adjustment** (or **commissioning)**?	N	N	N	N	N	N	N	N	N	N
Q7.	Do the regulations require a specified standard or method for **control**?	N[3]	N[3]	N[3]	N[3]	N[3]	N[3]	N[3]	N[3]	N[3]	N[3]
Q8a.	Are the standards and methods above always applied, or only when they are **technically, economically and functionally feasible**?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Q8b.	... if applied only when "**technically, economically and functionally feasible**", do you specify how that condition is to be determined?										
Q9a.	Do regulations “... encourage the introduction of intelligent metering systems whenever a building is constructed or undergoes major renovation”?	N	N	N	N	N	N	N	N	N	N
Q9b.	... if not included in regulations, is there any other form of encouragement for intelligent metering?	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]	Y[4]
Q10a.	Do regulations “... encourage the installation of active control systems such as automation, control and monitoring systems that aim to save energy”?	N	N	N	N	N	N	N	N	N	N
Q10b.	… if not included in regulations, is there any other form of encouragement for active control systems?	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]	Y[5]

1) Only requirements to the replaced part and must at least comply with requirements valid for the date of building construction. 2) For safety issues only. 3) Only functional requirements for the systems. 4) Companies and energy suppliers have interest in implementing intelligent meters and market penetration is rapidly increasing. 5) Widely spread, driven by the market.

Requirements description

The Danish Building Regulations include requirements for a wide range of technical buildings systems.
There are specific energy-related requirements for boilers based on gas, oil, coal, biomass and similar. The requirements for boilers based on gas or oil means that only condensing boilers can be used in Denmark, both for new buildings and new installations in existing buildings. Ventilation is included in the regulations, and requirements for mechanical ventilation units include requirements for heat recovery rate and energy used for transport of air (SFP system). There is a requirement to install solar heating for domestic hot water for buildings that have an estimated hot water consumption of more than 2000 liters per day. The requirement should be fulfilled for both new buildings and existing buildings that undergo a major renovation. The installation should cover a demand at least corresponding to 95% of the domestic hot water consumption from May to September. In addition to this, there are requirements for heat pumps, elevators and cooling systems.

Input data

No calculations are requested.